



MEMORANDUM

TO: State Board of Education
FROM: Jane Cooney, Elementary Mathematics and Science Specialist
Mike Roach, Secondary Mathematics Specialist
DATE: October 7, 2009
SUBJECT: Mathematics Textbook Adoption

We reviewed the textbooks submitted by publishers for the mathematics adoption and would like to share the results of our review. All of the submitted textbooks fall short of meeting the full spectrum of Indiana's Academic Standards in Mathematics, but most meet a significant portion of the standards (albeit different portions).

The Indiana State Board of Education may adopt textbooks that are not recommended by the Advisory Committee on Textbook Adoption. Indiana Code 20-20-5-3 provides that:

Sec. 3. The state board may adopt only textbooks that:

- (1) have been recommended by the advisory committee on textbook adoption established by IC 20-19-2-3; or
- (2) are approved by seven (7) members of the board.

Nontraditional textbooks judged not satisfactory more frequently

At their August meeting, the members of the textbook advisory committee found a higher percentage of middle school, Algebra I and Algebra II traditional textbooks to be satisfactory than nontraditional textbooks.

- For grades 6 through 8, eleven of the submitted textbooks can be characterized as nontraditional. Of these eleven, seven were considered not satisfactory. In all, only eight of the textbooks were found not satisfactory and seven of those eight are non-traditional.
- For Algebra I and Algebra II, all four of the textbooks considered not satisfactory were nontraditional textbooks.

We reviewed a sample of the submitted textbooks for alignment to Indiana's Academic Standards in Mathematics, and we believe the results of our review explain this disparity. Overall, the traditional textbooks were reasonably well aligned with the mathematics content standards (number sense, algebra and functions, geometry and measurement, and data analysis in grades 1-8; various topics in high school) but showed limited rigor and depth of knowledge as described in the mathematics process standards (problem solving, reasoning and proof, communication, connections, and representations). The nontraditional texts were less aligned with the content standards but showed greater rigor and depth of knowledge—and therefore greater alignment with the process standards. Since there are merits to both types of alignment, we believe the decision should be left to local districts and schools.

Some textbooks judged not satisfactory appear to have satisfactory alignment

Due to a production delay, Houghton Mifflin Harcourt submitted its West Virginia program under the title Indiana Math 2011 and has since sent textbooks identified as Indiana-specific. The contents of the submitted textbooks match Indiana's standards as well as the other traditional textbooks.

Pearson/Prentice Hall's CME Project Algebra I was found to be not satisfactory, presumably because of inadequate alignment to the content standards for those courses. We found that CME Project Algebra I covered 81% of the Algebra I indicators and CME Project Algebra II covered 81% of the Algebra II indicators. The main issue with the CME Project textbooks is their limited coverage of data analysis and probability. The traditional Algebra I and Algebra II textbooks submitted do tend include data analysis and probability, though with limited depth.

Recommendation

Given the State Board of Education's blanket waiver for the use of instructional materials, the primary value of the state textbook process is establishing a guaranteed price for the length of the adoption cycle. The Department, therefore, makes the following recommendations for textbooks judged to be not satisfactory by the textbook advisory committee.

Textbook	Publisher	Grade/Course	Review Panel Recommendation	Department Recommendation
Indiana Math 2011	Houghton Mifflin Harcourt	Grades 3-6	Unacceptable	Acceptable
Connected Math 2	Pearson/Prentice Hall	Grades 6 and 8	Unacceptable	Acceptable
McDougal Littell MathThematics	Holt McDougal/Houghton Mifflin Harcourt	Grades 6, 7, 8	Unacceptable	Acceptable
UCSMP Pre-Transitions Mathematics	Wright Group/McGraw Hill	Grade 7	Unacceptable	Unacceptable
UCSMP Transitions Mathematics	Wright Group/McGraw Hill	Grade 8	Unacceptable	Unacceptable
MATHConnections Algebra I	Herff Jones/It's About Time	Algebra I	Unacceptable	Acceptable
CME Project Algebra I	Pearson/Prentice Hall	Algebra I	Unacceptable	Acceptable
MATHConnections Algebra II	Herff Jones/It's About Time	Algebra II	Unacceptable	Acceptable
CME Project Algebra II	Pearson/Prentice Hall	Algebra II	Unacceptable	Acceptable
Number Power (several books)	Wright Group/McGraw Hill	Integrated Mathematics	Unacceptable	Unacceptable

The books recommended for adoption by the Department in addition to those recommended by the Advisory Committee are marked by an asterisk (*) on the attached list.

In general, it is our view that the current textbook adoption process unnecessarily excluded many texts that promote what we view as promising approaches to increasing the mathematical achievement of Indiana students. Said another way, we believe that the textbooks submitted for consideration in the adoption process represent a reasonably strong slate of candidates for state adoption with a few exceptions. Against the backdrop of the textbook adoption waiver from the State Board of Education, the remaining strength of the adoption process is primarily one of cost control. Because of this, we believe most of the textbooks submitted for mathematics should be included in the state adoption list. At the same time, we want to underscore the fact that selection of learning materials does matter and plays a contributing role in the quality of instruction. In October, therefore, the Department is organizing Instructional Materials Analysis workshops to support local districts in the selection of teaching and learning materials that address both content and process standards.

Score	Textbook Name	Publisher	Grade Levels/Course	Category
1st Grade				
__S__	Math 1-3 For Indiana Student Kits	Saxon	1	4302-03
__S__	Bridges in Mathematics	Math Learning Center	1	4301-05
__S__	Math in Focus	Great Source/Houghton Mifflin Harcourt	1	4301-05
__S__	Math Expressions	Houghton Mifflin Harcourt	1	4301-05
__S__	Math Out of the Box	Carolina Biological Supply Company	1	4301-05
__S__	Math Connects: Indiana Student Edition	Macmillan/McGraw-Hill	1	4301-06
__S__	enVision Math	Scott Forsman/Addison Wesley	1	4301-06
__S__	Investigations in Number, Data, & Space	Scott Forsman	1	4301-06
__S__	Everyday Mathematics	Wright Group/McGraw-Hill	1	4301-06
__S__	Indiana Math 2011	Houghton Mifflin Harcourt	1	4301-06
2nd Grade				
__S__	Math 1-3 For Indiana Student Kits	Saxon	2	4302-03
__S__	Bridges in Mathematics	Math Learning Center	2	4301-05

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__S__	Math in Focus	Great Source/Houghton Mifflin Harcourt	2	4301-05
__S__	Math Expressions	Houghton Mifflin Harcourt	2	4301-05
__S__	Math Out of the Box	Carolina Biological Supply Company	2	4301-05
__S__	Math Connects: Indiana Student Edition	Macmillan/McGraw-Hill	2	4301-06
__S__	enVision Math	Scott Forsman/Addison Wesley	2	4301-06
__S__	Investigations in Number, Data, & Space	Scott Forsman	2	4301-06
__S__	Everyday Mathematics	Wright Group/McGraw-Hill	2	4301-06
__S__	Indiana Math 2011	Houghton Mifflin Harcourt	2	4301-06
3rd Grade				
__S__	Math 1-3 For Indiana Student Kits	Saxon	3	4302-03
__S__	Intermediate 3-5 Student	Saxon	3	4303-05
__S__	Bridges in Mathematics	Math Learning Center	3	4301-05
__S__	Math in Focus	Great Source/Houghton Mifflin Harcourt	3	4301-05
__S__	Math Expressions	Houghton Mifflin Harcourt	3	4301-05

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__S__	Math Out of the Box	Carolina Biological Supply Company	3	4301-05
__S__	Math Connects: Indiana Student Edition	Macmillan/McGraw-Hill	3	4301-06
__S__	enVision Math	Scott Forsman/Addison Wesley	3	4301-06
__S__	Investigations in Number, Data, & Space	Scott Forsman	3	4301-06
__S__	Everyday Mathematics	Wright Group/McGraw-Hill	3	4301-06
__NS*__	Indiana Math 2011	Houghton Mifflin Harcourt	3	4301-06
4th Grade				
__S__	Intermediate 3-5 Student	Saxon	4	4303-05
__S__	Bridges in Mathematics	Math Learning Center	4	4301-05
__S__	Math in Focus	Great Source/Houghton Mifflin Harcourt	4	4301-05
__S__	Math Expressions	Houghton Mifflin Harcourt	4	4301-05
__S__	Math Out of the Box	Carolina Biological Supply Company	4	4301-05
__S__	Math Connects: Indiana Student Edition	Macmillan/McGraw-Hill	4	4301-06
__S__	enVision Math	Scott Forsman/Addison Wesley	4	4301-06

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__S__	Investigations in Number, Data, & Space	Scott Forsman	4	4301-06
__S__	Everyday Mathematics	Wright Group/McGraw-Hill	4	4301-06
__NS*__	Indiana Math 2011	Houghton Mifflin Harcourt	4	4301-06

5th Grade

__S__	Intermediate 3-5 Student	Saxon	5	4303-05
__S__	Bridges in Mathematics	Math Learning Center	5	4301-05
__S__	Math in Focus	Great Source/Houghton Mifflin Harcourt	5	4301-05
__S__	Math Expressions	Houghton Mifflin Harcourt	5	4301-05
__S__	Math Out of the Box	Carolina Biological Supply Company	5	4301-05
__S__	Math Connects: Indiana Student Edition	Macmillan/McGraw-Hill	5	4301-06
__S__	enVision Math	Scott Forsman/Addison Wesley	5	4301-06
__S__	Investigations in Number, Data, & Space	Scott Forsman	5	4301-06
__S__	Everyday Mathematics	Wright Group/McGraw-Hill	5	4301-06

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__NS*__	Indiana Math 2011	Houghton Mifflin Harcourt	5	4301-06
6th Grade				
__S__	Math Connects: Indiana Student Edition	Macmillan/McGraw-Hill	6	4301-06
__S__	enVision Math	Scott Foresman/Addison Wesley	6	4301-06
__S__	Everyday Mathematics	Wright Group/McGraw-Hill	6	4301-06
__NS*__	Indiana Math 2011	Houghton Mifflin Harcourt	6	4301-06
__S__	Pre-Transitions Math (UCSMP)	Wright Group/McGraw-Hill	6	4306-07
__S__	Prentice Hall Mathematics	Pearson/Prentice Hall	6	4306-08
__NS*__	Connected Mathematics 2	Pearson/Prentice Hall	6	4306-08
__S__	Course 1-3 Student	Saxon	6	4306-08
__S__	Indiana Holt McDougal Mathematics (Courses 1-3)	Holt McDougal/Houghton Mifflin Harcourt	6	4306-08
__S__	Indiana McDougal Littell Math (Courses 1-3)	Holt McDougal/Houghton Mifflin Harcourt	6	4306-08
__NS*__	McDougal Littell MathThematics	Holt McDougal/Houghton Mifflin Harcourt	6	4306-08
__S__	Indiana Math Connects: Concepts, Skills & Problem Solving	Glencoe/McGraw-Hill	6	4306-08

Score	Textbook Name	Publisher	Grade Levels/Course	Category
7th Grade				
__NS__	Pre-Transitions Math (UCSMP)	Wright Group/McGraw-Hill	7	4306-07
__S__	Transition Math (UCSMP)	Wright Group/McGraw-Hill	7	4307-08
__S__	Prentice Hall Mathematics	Pearson/Prentice Hall	7	4306-08
__S__	Connected Mathematics 2	Pearson/Prentice Hall	7	4306-08
__S__	Course 1-3 Student	Saxon	7	4306-08
__S__	Indiana Holt McDougal Mathematics (Courses 1-3)	Holt McDougal/Houghton Mifflin Harcourt	7	4306-08
__S__	Indiana McDougal Littell Math (Courses 1-3)	Holt McDougal/Houghton Mifflin Harcourt	7	4306-08
__NS*__	McDougal Littell MathThematics	Holt McDougal/Houghton Mifflin Harcourt	7	4306-08
__S__	Indiana Math Connects	Glencoe/McGraw-Hill	7	4306-08
__S__	Fundamentals of Algebra	William Sadlier	7	4307
8th Grade				
__NS__	Transition Math (UCSMP)	Wright Group/McGraw-Hill	8	4307-08
__S__	Prentice Hall Mathematics	Pearson/Prentice Hall	8	4306-08

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__NS*__	Connected Mathematics 2	Pearson/Prentice Hall	8	4306-08
__S__	Course 1-3 Student	Saxon	8	4306-08
__S__	Indiana Holt McDougal Mathematics (Courses 1-3)	Holt McDougal/Houghton Mifflin Harcourt	8	4306-08
__S__	Indiana McDougal Littell Math (Courses 1-3)	Holt McDougal/Houghton Mifflin Harcourt	8	4306-08
__NS*__	McDougal Littell MathThematics	Holt McDougal/Houghton Mifflin Harcourt	8	4306-08
__S__	Indiana Math Connects: Concepts, Skills & Problem Sovling	Glencoe/McGraw-Hill	8	4306-08
__S__	Foundations of Algebra	William Sadlier	8	4308
__S__	Glencoe PreAlgebra	Glencoe/McGraw-Hill	8	4308

Algebra 1

__S__	Algebra 1	William Sadlier	Algebra 1	2520
__S__	Discovering Algebra: An Investigative Approach	Key Curriculum Press	Algebra 1	2520
__S__	Prentice Hall Algebra 1	Pearson/Prentice Hall	Algebra 1	2520
__NS*__	CME Project Algebra 1	Pearson/Prentice Hall B 10	Algebra 1	2520

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__S__	Algebra 1	Saxon	Algebra 1	2520
__S__	Algebra (UCSMP)	Wright Group/McGraw-Hill	Algebra 1	2520
__S__	Indiana Holt Algebra 1	Holt McDougal/Houghton Mifflin Harcourt	Algebra 1	2520
__S__	Indiana McDougal Littell Algebra 1	Holt McDougal/Houghton Mifflin Harcourt	Algebra 1	2520
__NS*__	MATH Connections Algebra 1	It's About Time, Herff Jones Education	Algebra 1	2520
__S__	Algebra Connections	CPM Educational Program	Algebra 1	2520
__S__	Algebra Concepts and Applications	Glencoe/McGraw-Hill	Algebra 1	2520
__S__	Algebra 1	Carnegie Learning	Algebra 1	2520
__S__	Algebra 1	CORD Communications	Algebra 1	2520
Algebra 2				
__S__	Discovering Advanced Algebra: An Investigative Approach	Key Curriculum Press	Algebra 2	2522
__S__	Prentice Hall Algebra 2	Pearson/Prentice Hall	Algebra 2	2522
__NS*__	CME Project Algebra 2	Pearson/Prentice Hall	Algebra 2	2522
__S__	Algebra 2	Saxon B I I	Algebra 2	2522

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__S__	Advanced Algebra (UCSMP)	Wright Group/McGraw-Hill	Algebra 2	2522
__S__	Indiana Holt Algebra 2	Holt McDougal/Houghton Mifflin Harcourt	Algebra 2	2522
__S__	Indiana McDougal Littell Algebra 2	Holt McDougal/Houghton Mifflin Harcourt	Algebra 2	2522
__NS*__	MATH Connections Algebra 2	It's About Time, Herff Jones Education	Algebra 2	2522
__S__	Algebra 2 Connections	CPM Educational Program	Algebra 2	2522
__S__	Glencoe Indiana Algebra 2	Glencoe/McGraw-Hill	Algebra 2	2522
__S__	Algebra 2	Carnegie Learning	Algebra 2	2522
__S__	Algebra 2	CORD Communications	Algebra 2	2522
Calculus				
__S__	Calculus: Concepts and Applications	Key Curriculum Press	Calculus	2562
__S__	Calculus: Graphing, Numerical, Algebraic, Media Update	Pearson/Prentice Hall	Calculus	2562
__S__	Calculus of a Single Variable	Holt McDougal/Houghton Mifflin Harcourt	Calculus	2562
__S__	Single Variable Calculus	Holt McDougal/Houghton Mifflin Harcourt	Calculus	2562
__S__	Calculus and Early Transcendental Functions	Glencoe/McGraw-Hill B 12	Calculus	2562

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__S__	Single Variable Calculus	Bedford, Freeman & Worth	Calculus	2562
__S__	Single Variable Calculus: Early Transcendentals	Bedford, Freeman & Worth	Calculus	2562
Geometry				
__S__	Discovering Geometry: An Investigative Approach	Key Curriculum Press	Geometry	2532
__S__	Prentice Hall Geometry	Pearson/Prentice Hall	Geometry	2532
__S__	CME Project Geometry	Pearson/Prentice Hall	Geometry	2532
__S__	Geometry	Saxon	Geometry	2532
__S__	Geometry (UCSMP)	Wright Group/McGraw-Hill	Geometry	2532
__S__	Indiana Holt Geometry	Holt McDougal/Houghton Mifflin Harcourt	Geometry	2532
__S__	Indiana McDougal Littell Geometry	Holt McDougal/Houghton Mifflin Harcourt	Geometry	2532
__S__	MATH Connections Geometry	It's About Time, Herff Jones Education	Geometry	2532
__S__	Geometry Connections	CPM Educational Program	Geometry	2532
__S__	Glencoe Indiana Geometry	Glencoe/McGraw-Hill	Geometry	2532
__S__	Geometry Concepts and Applications	Glencoe/McGraw-Hill	Geometry	2532

Score	Textbook Name	Publisher	Grade Levels/Course	Category
__S__	Geometry	Carnegie Learning	Geometry	2532
__S__	Geometry	CORD Communications	Geometry	2532
Integrated Math I, II, III				
__NS__	Number Power: PreAlgebra, Algebra, Geometry, Analyzing Data, & Measurement	Wright Group/McGraw-Hill	Integrated Math I, II, III	2554
__S__	Integrated Math I, II, and III	Carnegie Learning	Integrated Math I, II, III	2554
PreCalculus/Trigonometry				
__S__	Precalculus with Trigonometry: Concepts and Applications	Key Curriculum Press	PreCalculus/Trigonometry	2564
__S__	Precalculus: Graphical, Numerical, Algebraic, Media Update	Pearson/Prentice Hall	PreCalculus/Trigonometry	2564
__S__	Precalculus: Enhanced with Graphical Utilities	Pearson/Prentice Hall	PreCalculus/Trigonometry	2564
__S__	Precalculus	Pearson/Prentice Hall	PreCalculus/Trigonometry	2564
__S__	CME Project Precalculus	Pearson/Prentice Hall	PreCalculus/Trigonometry	2564
__S__	Precalculus with Limits	Holt McDougal/Houghton Mifflin Harcourt	PreCalculus/Trigonometry	2564
__S__	PreCalculus: Mathematics for Calculus	Holt McDougal/Houghton Mifflin Harcourt	PreCalculus/Trigonometry	2564
__S__	Glencoe PreCalculus	Glencoe/McGraw-Hill	PreCalculus/Trigonometry	2564

